

Remarks:

Reconsideration of the application is requested. Claims 1 and 3-20 are now in the application. Claims 12-14, 16, and 18 have been amended. Claim 2 has been canceled.

In the first paragraph on page 2 of the Office action, the Examiner objected to claim 2 for failing to further limit the subject matter of a previous claim. Claim 2 has been canceled. The objection is thereby moot.

In the second paragraph on page 2 of the above-identified Office action, the Examiner rejected claims 12-20 as being indefinite under 35 U.S.C. § 112, second paragraph. More specifically, the Examiner has stated that the claims merely stated a use without positively stating the steps.

Claims 12-14, 16, and 18 have been amended. The amended claims positively describe the steps necessary to obtain the use.

Accordingly, the claims meet the requirements of 35 U.S.C. § 112, second paragraph. Should the Examiner find any further objectionable items, counsel would appreciate a telephone call during which the matter may be resolved. The changes are neither provided for overcoming the prior art nor do they narrow the scope of the claim for any reason related to the statutory requirements for a patent.

In the third paragraph on page 2 of the Office action, the Examiner rejected claims 12-20 as being unpatentable under 35 USC § 101 for claiming a use without further defining steps. As stated, claims 12-14, 16 and 18 have been amended. The amended claims positively describe the steps necessary to obtain the use. Accordingly, the rejection has been overcome.

In the first paragraph of page 3, the Examiner rejected claims 1-11 as being fully anticipated by "Nano Letters Reference" under 35 U.S.C. § 102(a).

Applicant respectfully notes that the Nano Letters Reference has a publication November 22, 2001. *See* 35 U.S.C. § 102(a). As set forth in the Declaration of record, the instant application is a continuation application of copending International Application Serial No. PCT/IL02/00237, filed March 25, 2002, which claims international priority of the Israeli Application No. 142254, filed March 26, 2001, under 35 U.S.C. § 119. Pursuant to 35 U.S.C. §§ 119, 120, and 363, applicant is entitled to the priority date of the Israeli application. *See* MPEP §§ 201.13 and 1895. Thus, the instant application predates the Nano Letters Reference. Because the Nano Letters Reference was filed after the priority date of the instant application, applicant respectfully believes that the Nano Letters Reference is unavailable as prior art.

An uncertified copy of the priority application, IL 142254, which is in English, is attached.

A certified copy of the priority application has been ordered and will be duly filed.

Accordingly, applicant respectfully believes that priority will be perfected and the Nano Letters Reference is unavailable as prior art. Therefore, Applicant respectfully submits that the Section 102 rejection on page 3, paragraphs 1 to 4 of the Office action is now moot.

In the sixth paragraph on page 3 of the Office action, the Examiner rejected claims 1-2 and 7-8 as being anticipated by Miyano '699 under 35 USC § 102(b). As will be explained below, the claims were patentable over the cited art in their original form and the claims have, therefore, not been amended to overcome the references.

Before discussing the prior art in detail, a brief review of the invention as claimed is provided. Claim 1 calls for, *inter alia*, a method for the preparation of an aqueous suspension of carbon nanotubes, that includes the following steps:

adding to an aqueous medium, prior to the addition of carbon nanotubes or thereafter, a water-soluble polymeric material selected from polysaccharides and polypeptides, thereby to separate the nanotubes into dispersed, essentially single tubes. (Emphasis added by Applicant.)

Firstly, the Miyano '699 is from 1974 and never mentions carbon nanotubes. Carbon nanotubes were not even known by 1974. Therefore, Miyano '699 cannot be cited as anticipating the instant invention, which relates solely to the carbon nanotubes.

Secondly, Miyano '699 teaches a process for encapsulating particles of silica or kaolin or starch (e.g., claim 9 of the patent) with a waxy material at a temperature higher than the melting point of said wax. No analogy can be found between covering silica particles (the size of about 0.5 mm, line 3 at column 3) with molten wax, and dispersing carbon nanotubes in a polysaccharide solution at the room temperature. Miyano '699 teaches neither carbon nanotubes, nor specifically polysaccharides. Gum Arabic is mentioned in the patent as an optional component in the group of optional additives among organic salts, inorganic salts, colloid materials, and surface active agents (lines 52-57 at column 2).

It is therefore believed that said patent cannot teach a skilled person anything about the instant novel technique.

In the second full paragraph on page 4 of the Office action, the Examiner rejected claims 1-11 as being unpatentable over Papadopoulos '162 in view of Grasko '076 under 35 USC § 103(a).

The Examiner admits that the cited prior art does not disclose using polysaccharides or polypeptides as dispersants for carbon nanotubes, but she suggests that the "film-forming binder" of Papadopoulos '162, which could possibly be a water-soluble polymer, might have been combined with Grasko '076, which teaches that polysaccharides can be water-soluble.

Grasko '162 relates to carbon nanofibers dispersed in a film-forming binder (patent claim 1). Thus, the fibers in Grasko '162 are embedded in a layer, while the nanotubes of the instant application are separated and essentially single tubes (instant claim 1).

Therefore, Papadopoulos '162 relates to a different technological situation; but even if one with ordinary skill in the art, for some reason, would have chosen this reference to learn

about dispersion abilities of various materials, that person would neither be led to select water-soluble polymers as preferred film-forming binders nor as preferred dispersants. Without distinguishing between the applicability of the possible materials, Papadopoulos '162, columns 11 and 12, laundry-lists hundreds of materials and material groups including water soluble polymers (such as maleic anhydride copolymers), water insoluble polymers (such as cellulose), synthetic hydrophilic polymers (such as polyacrylamides), synthetic other polymers (such as polystyrenes, polyurethanes), polysiloxanes, etc.

Furthermore, the technique of embedding the carbon fibers into the film-forming binder is not limited to aqueous systems, in contrast to the instant technique. Preferred solvents include water, alcohols, ketones, ethers, esters, etc. (lines 6-15 at column 13).

Without hindsight, there would be no motivation to combine Papadopoulos '162 with Grasko '076. However, even if hindsight were permissible, there is no clear teaching in Grasko '076 that polysaccharides or polypeptides would have been preferred as water-soluble polymers, whatever the purpose might have been. As for the dispersant, Grasko '076 teaches (see, for example, claim 3) that an organic compound should be selected from the group consisting of simple organic compounds, carboxyalkylcelluloses, water soluble polysaccharides, and water-soluble proteins, water-soluble resins (including polymers such as polyacrylamides), water emulsion latexes, and cellulosic ethers.

As discussed previously, Papadopoulos '162 does not relate to an aqueous suspension of the instant invention, and further, that it does not teach water soluble polymers as preferred (teaching cellulose, polystyrenes, etc).

Furthermore, as discussed previously, Grasko '076 does not teach that polysaccharides or proteins are preferred water soluble polymers.

Accordingly, it is believed that the two documents, however combined, do not teach that polysaccharides or proteins might have any effects on dispersing carbon nanotubes to separate essentially single tubes.

In the penultimate paragraph on page 4 of the Office action, the Examiner detailed the rejection of claims 3 and 4. In contrast to the Examiner's conclusion, Applicants believe that removing water from a suspension of the instant invention would not have been obvious to one with ordinary skill in the art reading Papadopoulos '162. Papadopoulos '162 teaches nonaqueous systems as discussed previously.

Furthermore, because claims 3 and 4 depend from claim 1, claims 3 and 4 are novel and non obvious if claim 1 covers novel and nonobvious subject matter.

Clearly, the references do not show a method for preparing an aqueous suspension of carbon nanotubes as recited in claim 1 of the instant application. Accordingly, none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1. Therefore, claim 1 is patentable over the art. Moreover, because all of the dependent claims are ultimately dependent on claim 1, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 1 and 3-20 are solicited. In the event the Examiner should still find any of the claims to be unpatentable, please telephone counsel so that patentable language can be substituted.

If an extension of time for this paper is required, petition for extension is herewith made.

Conclusion

In light of the foregoing remarks, this application is now in condition for allowance and early passage of this case to issue is respectfully requested. If any questions remain regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

No fee is believed due. However, please charge any required fee (or credit any overpayments of fees) to the Deposit Account of the undersigned, Account No. 500601 (Docket No. 7640-X03-011).

Respectfully submitted,

A handwritten signature in black ink, reading "Loren D. Pearson". The signature is written in a cursive, flowing style.

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